R. Wenzlhuemer: Connecting the Nineteenth-Century World

If globalisation is understood as an increasing movement of goods (trade and commerce) and people (migration), an accelerated growth in the production and transfer of information (e.g. newspapers, news agencies) and capital (financial markets), as well as a process that âcomprises all processes that lead to a gradual detachment of patterns of sociocultural interaction from geographical proximityâ (p. 15), then this book is an important contribution for tracing such patterns of globalisation. The study demonstrates how the globe (its regions) was gradually connected by a web of telegraph lines, which constituted the basis of a growing information network. One of the focal points of the book is to analyse and explain the centres and peripheries which constituted that web, as well as the numerous nodal points of the flow of information. As the author remarks, it seems that the Internet of the twenty-first and the telegraph of the nineteenth and twentieth centuries have structural similarities which, among other things, represent todayâs global digital divide. â[T]he initial question that triggered the research behind this book emerged from the ambivalent relation between old and new telecommunication systems.[â¦] Which forces are giving rise to these similarities and what are the mechanisms behind them?â (p. 12)

The authorâs âgeneral questions culminate in the principal issue of the book namely in how far telegraphy helped to shape processes of globalization by providing new possibilities and new choices to local and global actors while the network was at the same time shaped by the intentions, demands and actions of those very

actors.â (p. 15) Chapter 2 provides the conceptual and analytical background of â[t]he telegraph and globalizationâ. According to the author, it was the telegraph that dematerialised information, transmitting it electrically from sender to recipient (âdematerialization of information flowsâ, fn 12, pp. 35-6 â long explanation in a footnote!). At the end of the book, however, the author states that â[u]ntil information flows were dematerialized, information was commonly transported attached to a material carrier.â (p. 255). The difference between a hand and ink written letter, for example, transported by a runner and a message transformed by a mechanical device and sent via a copper cable remains somewhat unclear. It can be grasped what the author means but the concept would need some more elaboration. Yet one could go a step further here. Why does de-materialisation only have to refer to the removal of the human or animal body? The usage of cables, made out of copper, the mechanical device used to transform the message etc. are all equally part of the same âmaterialâ paraphernalia. So the distinction drawn is indeed something that those who have forwarded the âmaterial turnâ would object to. In such a circumstance, it is questionable just how relevant the term âdematerialisationâ is here. Even if one distantiates from the actor-network theory and sees agency as only vested in human actors, it does not make the other equipment, paraphernalia used any less âmaterialâ.

The terms of âtechnological rationaleâ and ânetwork rationaleâ are introduced in order to offer a balanced and analytically rewarding alternative to techno and socio-

determinant accounts of the interplay between actors and technologies. This rationale consists of especially developed telegraphic message style and language, codes and abbreviations, trained personnel encoding and decoding messages, telegraph offices with telegraph devices etc. Additionally, the terrestrial and submarine cable construction evolved into a global network between 1860 and 1900, connecting all continents of the globe. This network, with its centres and peripheries, also developed a logic or rationale of its own. (cf. pp. 26; 54-5.) âIn combination with the action of humans, such rationales shape the interplay between people and structures, society and technologyâ, whilst human actions, i.e. agency is defined as âto rest only in human actorsâ which is why âthis study digresses pronouncedly from the ideas of actor-network theory.â (p. 56)

Chapter 3 elaborates on âThe technological history of telegraphyâ. It summarises the pre-history of the electromagnetic experiments, the earlier applied optical telegraphic systems and finally the invention of the telegraph and its early implementation in various countries of Europe and the USA in the first half of the nineteenth century (pp. 62-76). Chapter 4 places âThe telegraph in contextâ and thus provides an overview of the current state of the art (cf. e.g. fn 7 p. 79) including the paradigm shift of the last decade. It is during this phase that historians discovered the telegraph as an object of history beyond the realms of a sheer history of technology. Since then, the telegraph is being seen as a tool to rule. More recently, the social aspects of the telegraph have also been taken into consideration, for example its influence on the press, on trade and finance and, last but not least, society and culture (pp. 77-96).

Chapter 5 describes and analyses â[t]he global telegraph networkâ as it was constructed during the second half of the nineteenth century, approximately between 1860 and 1880. The story of the construction of the network and its analysis concentrates on the submarine cables because firstly, with regards to insulation and laying, they were a major technological challenge and, secondly, they were more significant for global wiring and communication than overland lines (pp. 105-123, esp. maps pp. 111-12; 114-16). It would have, nonetheless, been worthwhile to consider the landlines as well since, for example, the westward expansion of the USA would not have been possible with that speed without the telegraph and the same is true for Russiaâs economic penetration of Siberia and territorial expansion into central Asia.

Chapters 6 to 8 constitute the core of the book. Tak-

ing *Social Network Analysis* established by Linton Freeman in 2007 Linton C. Freeman, Social Network Analysis, 4 vols., London 2007. as a tool (p. 138), the author analyses his impressive data with regards to the frequency and quantity of messages sent and transmitted on a global scale, in Britain and in British India according to âdegree, closeness, betweenness and eigenvectorâ (ibid.). The author is well grounded in his methodology. Both are adequate heuristic tools for generating his results. The maps on pp. 152-154 show the overall trend of telecommunication between 1881 and 1902. Apart from London, Paris, Berlin and Vienna as prime global communication hubs, places like Malta, New York, Algiers, Aden, Bombay and Brest were, among others, places of secondary importance. The maps also show new upcoming new places, for example Suez and Aden, which were of no importance in 1881, and yet acquired secondary ranking in 1902. This trend is confirmed by the analysis of external telecommunication between 1860 and 1910 (pp. 156-62). Striking is the fact that there seems to be rather little change in the international telegram traffic handled by the countries which submitted their data to the Bureau international des administrations télégraphiques.

To sum up, the book has indeed âfor the first time successfully reconstructed the structural conditions of the nineteenth-century telegraph network. It has contrasted these ideal conditions with the actual use of the structures and has identified and analysed numerous examples of the interdependence between structures and actorsâ (p. 258). The study has also demonstrated how, on the one hand, actors influenced the flow of information and, on the other hand, how the structures of the growing worldwide international and national telecommunication network influenced actors. The telegraph and its network indeed induced a process that gradually detached patterns of sociocultural interaction from geographical proximity (p. 15) If, however, globalisation is not simply the quantitative increase of (global) exchanges (which would mean that it is going on since time immemorial), but also a qualitative change, defined through processes of de-territorialisation and re-territorialisation, in whose course the sovereignty rights of a (nation) state and the competences of stately and supra-stately institutions and organisations are negotiated, Charles S. Maier, Transformations of territoriality, 1600-2000, in: Gunilla-Friederike Budde (ed.), Transnationale Geschichte, Göttingen 2006, pp. 32-55; Matthias Middell / Katja Naumann, Global History and the spatial turn: From the impact of area studies to the study of critical junctures of globalization, in: Journal of Global His-

tory 5 (2010) 1, pp. 149-70. then the telegraph is without doubt a part of a process which commenced in the middle of the nineteenth century.

A nuanced analysis of the recent conceptual debate on globalisation would have been of value. It would have given the book a solid framework in which the impressive quantitative data the author procures and its analysis could have led to even more insightful qualitative results, providing new contributions for an ongoing debate. That stated, the book is, nonetheless, a well written and entertaining story about the technological development and the sociocultural impact of the actors and the structures of the telegraph in a globalising world in the second half of the nineteenth century.

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